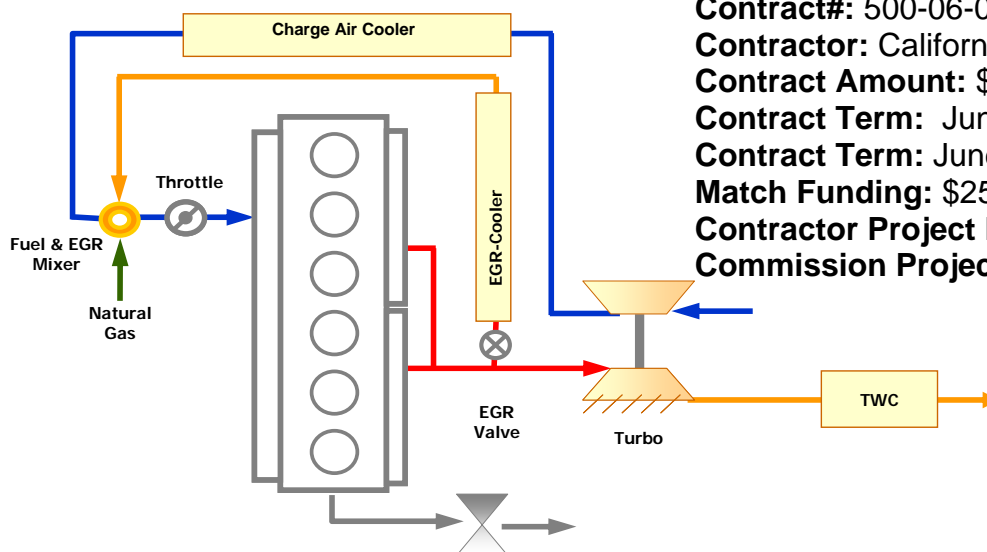


Field Demonstration of 0.2 Grams Per Horsepower-Hour (g/bhp-hr) Oxides of Nitrogen (NO_x) Natural Gas-Fired Engine



Contract#: 500-06-043

Contractor: California Air Resources Board

Contract Amount: \$225,000

Contract Term: June 2007 to December 2010

Contract Term: June 2007—December 2010

Match Funding: \$250,000 (CARB/ICAT)

Contractor Project Manager: Susan Fischer

Commission Project Manager: Tony Tully

The Issue

Exposure to ozone (O₃) and other photochemical oxidants has been associated with a wide range of human health effects in general populations, including the aggravation of heart and lung disease, and premature mortality. This is a concern in California's air quality management districts currently out of compliance with health-based federal and state ozone standards, especially the South Coast Air Quality Management District (SCAQMD) which includes the Los Angeles and Long Beach ports. The California Air Resources Board and the U.S. Environmental Protection Agency have adopted an oxides of nitrogen (NO_x) emission standard of 0.20 g/bhp-hr for heavy duty engines to reduce levels of this critical ozone precursor. This standard will take effect in 2010. Heavy-duty, natural gas (NG) engines currently exist that can meet the PM standards, but these engines have not met 2010 standards for NO_x.

Project Description

The purpose of this research is to accelerate the commercialization of the Cummins Westport ISI natural gas engine that meets the 2010 NO_x and PM standards. The engine will use spark ignition, exhaust gas recirculation technology with three-way catalyst technology for improved efficiency and lower costs. With power ratings from 250 to 320 horsepower, the engine will meet

the requirements of many bus and truck applications. A successful demonstration will promote the advancement of technology to control NOx emissions, reduce engine fuel consumption, and add another technology available to meet the 2010 standards for new engines and for retrofit applications.

PIER Program Objectives and Anticipated Benefits for California

This project will develop and help bring to market advanced transportation technologies that reduce air pollution and greenhouse gas emissions beyond applicable standards, and that benefit natural gas ratepayers (Public Resources Code 25620.1.[b] [1], Chapter 512, Statutes of 2006); and supports California's goal to support research, development and demonstration to improve the efficiency of petroleum-fueled vehicles and to reduce the cost and promote the availability of non-petroleum fuels per the Energy Action Plan 2005 by:

- Reducing health and environmental impacts from air pollution, and greenhouse gas emissions related to natural gas use.
- Increasing the use of alternative fuels.
- Meeting or exceeding ARB and U.S. EPA emission standards.

Contact

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